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ARTIFICIALLY CONTRACTED INDIAN HEADS:

BEING A CONTRIBUTION TO THE

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JANUARY 1897.

BY

HERBERT PAGE, M.D., D.P.H.,

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POST-MORTEM ARTIFICIALLY CONTRACTED INDIAN HEADS. By Herbert Page, M.D., D.P.H., Redditch.

Some time ago two specimens of artificially contracted Indian heads, received by a townsman from a relative long resident in Gualaceo, Ecuador, were submitted for my inspection. Being interested in the matter, I carefully examined them, and looked up the subject from scattered authoritative sources. I submit the annexed summary and the details of my examination of the two specimens.

Artificially contracted human heads have been known in Europe for, I believe, about forty-five years. The specimens belong, almost without exception, as far as I can ascertain, to the Indian tribes of South America. Specimens are not now rare, but can be met with in several of our own and various Continental museums. The more warlike and independent tribes of Indians seem to be the chief contributors of specimens. Perhaps the most frequent source are the Javaros Indians, living on the east side of the Andes; other contributory tribes of the West Amazon are the Mundurucus, the Makas, the Dyaks, the Canelos, and the Pinbuc Indians. The names 'Momea' and 'Chancha' are, I learn, commonly given to the specimens by the natives. The object of the preparation of the heads is to preserve them as trophies of valour, but occasionally they become idols or oracles. Wood, in his *Natural History of Man*, vol. ii. p. 575, says, "the Mundurucus perpetuate the memory of valiant deeds by preserving a trophy of the slain enemy. Indeed, this is the only way in which it is possible to preserve the accounts of their valour; and the Mundurucus follow in this respect the example of the Dyaks by cutting off and preserving the head of the dead man." Usually these preserved heads are considerably contracted, but one authority states,—"The Mundurucus preserve the heads of their enemies, but leave them the natural size."

The following is a list of known specimens I have been enabled to compile:—

1853. London. Specimen of Indian Javaros exhibited, only 1 in. high.

1860.*	„	Specimen found with tools in ancient grave at Pisciken.
1862.	„	Specimen called an 'idol's' head.
1874.	May.	Two exhibited at Anthropological Institute, London. One reduced (circumferentially) to 11 in., the other $9\frac{1}{2}$ in.
1882.	London.	Specimen exhibited, called 'head of Incas.'

The British Museum possesses 4† or more specimens; Brighton Museum, 1; Manchester (Owens College), 1 (very perfect); Cambridge University, 3; Antiquarian Museum, Edinburgh, 1‡; Edinburgh University Anatomical Museum, 1; Dublin University, 1; Berlin University (Ethnolog. Department), 3,—the 1st, received from German consul at Panama in 1868, described at the time as the 'skull of an Aztec': this error arose by the arrival, also from Panama, by the same ship of a company of Aztecs or Pigmies, on tour in Europe. It turned out to be the head of a Javaros Indian, and was stated to be "the first specimen seen in Europe." Vienna Public Museum possesses 3 specimens, and there are 3 more in the Pathological Museum. This makes 27 known specimens. Further, I am informed trustworthily that a good number of specimens are to be met with in Italy,—Professor Giglioli being an authority on the subject.

Mode of preparation.—This, as related by various authorities, differs slightly. It is said to have been described by an American traveller "O.," who travelled in Ecuador and published his *Travels along the Napo River* in 1880–81, but I am unable to trace the book. Sir John Lubbock, in "Notes on the Macas Indians," *Journal Anthrop. Inst.*, 1874, says "the process is very simple. The heads are boiled for some time in an infusion of herbs, the bones are then removed through the neck, heated stones

* Communication to Ethnological Society, London, 1860, by Mr M. Bollaert, on the Idol Human Head of the Jivaro Indians.

† Guide to British Museum—American Sec., under Brazil :—"Cases 86–88 have in the Ethnographical Gallery two preserved heads from Mundurucus on the Amazon, two shrunken heads, prepared by Javaros Indians."

‡ The specimen in the Antiquarian Museum, together with one in the possession of Dr Alfred Pullar, were described by Professor Duns in *Proc. Roy. Soc. Edinburgh*, vol. xiii. p. 621, 1886. A specimen is also in the Pitt-Rivers Collection in the Oxford Museum, and one was shewn by Dr Stolpe to the Medical Society in Stockholm.—Editor.

are then put into the hollow, and they are, when cool, replaced by others. The head dries and contracts. A string is then run through the head, by which it is suspended in the hut." Wood, in his *Natural History of Man*, says, the Mundurucus and Dyaks "cut off the head with his bamboo knife, removes the brain, soaks the whole head in a bitter vegetable oil called 'anderoba,' and dries it over a fire or in the sun. When it is quite dry, he puts false eyes into the empty orbits; combs, parts, and plaits the hair, and decorates it with brilliant feathers; and lastly, passes a string through the tongue, by means of which it can be suspended." Bollaert says, "After a war, the heads of the victims are cut off, the skull and its contents removed, and a heated stone (it is said) is introduced into the hollow of the skin, desiccation goes on, and it is reduced to about one-fourth, retaining some appearance of the features." "A double string is attached to the top of the head, so that it may be worn round the neck. The lips are sewn together, and a number of strings hang from them, the use of which is not apparent."

Simson (*Journal Anthrop. Inst.*, 1880) says, "To produce these ghastly objects, the skin is cut round the neck, and the entire covering of the skull removed in one piece; they are gradually dried by means of hot stones placed inside; the head shrinks to the required size." He says also, "the Pinbue Indians have a very perfect and finished method of scalping, by which the victim's head is reduced in size to that of a moderately large orange, maintaining tolerably well all the features; . . . . the nose, of course, acquires too much prominence."

The attached strings.—These, it will be observed, are for suspension "in the hut" (Lubbock); "in the maloeca or council-house" (Wood); "round the neck" (Bollaert). "The use of the lip strings is not apparent" (Bollaert).

Customs or Ceremonies connected with the heads.—Sir John Lubbock says, "the head is abused by the owner, then answered by a priest speaking for the head, after which the mouth is sewn up to prevent any chance of reply." Wood says, "when the chief gives orders for a feast, the proud owner of the head arrays himself in his most magnificent suit of feathers, fetches his prize from the maloeca, fixes it upon the point of his spear, and parades himself before his companions in all the glory of an

acknowledged brave." Bollaert says, "a feast ensues, when the victor abuses the head roundly, to which the head is made to reply in similar terms, the Indian priest being the spokesman for the head or chaucha (an Indian name for a sow), and he concludes his part thus: 'Coward! when I was in life thou didst not dare to insult me thus; thou didst tremble at the sound of my name. Coward! some brother of mine will avenge me.' The victor at this raises his lance, strikes and wounds the face of his enemy, after which he sews the mouth up, dooming the idol to perpetual silence excepting as an oracle, questions being put to it when the inquirer is under the spell of a narcotic."

Financial value of these heads.—As far as I can ascertain, this ranges from £20 to £28 for very good specimens. At New York it is said one can, through the proper channels, "get as many as you like at £25 each." The owner of the heads I examined informed me that the relative from whom he received them wrote that he sent his son into the interior to the Indian tribe to fetch them; also, that some time previously he sold a similar specimen for 28 dollars (£5, 12s.), which was reported to have been subsequently resold by the purchaser to a museum for £70, and that another specimen which had been obtained by a Frenchman was purchased for the Berlin Museum for 1700 francs (£68).

Experiment.—I learn from a distinguished anatomical authority in England, that if a dried, preserved human head be softened in boiling water, and by means of an incision along the occiput the soft parts be peeled from the bone, it will shrink in exactly the same manner as these preserved, contracted Indian heads.

The specimens examined by the author were:—

Two specimens received at Redditch—sex and age.—Two small decapitated heads, both apparently male: vertical height of larger one 9 cm.; of smaller, 8 cm. The larger is by far the more perfect, possibly about 25–30 years of age; the features are remarkably well preserved, the expression calm and not unpleasing. The other head is considerably smaller; and though equally well preserved, the features are not so well marked, the expression is less calm and pleasing, the left ala of nose is wanting. It is apparently slightly younger and of a different racial type.

General observation—external examination.—The heads are perfectly dry, of wooden hardness, and jet black in colour, matt surface. The rows of papillæ of the skin are distinctly visible, particularly in the smaller head; no artificial deformation is present in either specimen. The heads dolichocephalic, and the features are sharp, the zygomatic arches well marked, the jaws slightly prognathous, more particularly those of the smaller specimen.

Point of decapitation.—The point of decapitation in the smaller head is 3 cm. below the lobe of the ears; the aperture of the neck is ovoid; the integument is reflected over an ellipse (3·5 × 3 cm.) of wood, to which it is lashed by 37 continuous overcast stitches of twisted hempen cord. The point of decapitation in the larger head is 2 cm. below the lobe of ears; the ellipse is 2·5 × 2 cm. There are no attachments.

Odour.—The odour of the heads is distinctly aromatic and bituminous, specially marked in the smaller head. The hair of the smaller head feels slightly unctuous, and has the aromatic odour. In the hair of the larger head the unctuousness is absent, and the odour very faint.

Nose.—The extremity of the nose in the smaller head is everted upward; it is 1·5 cm. wide, and projects 2 cm. from the

root of the organ. The nostrils are very slightly elliptical; the

columna of the septum is broad. The nose in the larger

specimen is straight, otherwise similar to that of the smaller. The left ala is wanting; and several patches of loss of the bituminous substance are noticeable about the nose.

Lips.—The lips of the larger head are of the 'Negro' type, prominent, and 8 cm. thick; they are pierced by 3 wooden pegs 5 cm. long; the edges of the apertures are rounded like that present in the ear lobes. The lips of the smaller head are less everted and prominent, and through and from them depend 42 brownish-coloured twisted cotton cords, arranged in 4 skeins, each 23 cm. long.

Eyes.—The eyelids only are present: the palpebral apertures in the smaller head are half open, are small, and horizontal in direction. The superciliary ridges are prominent and the eyebrows thick; the hair is 5 mm. long, directed towards the outer angle of the eye. The eyelids in the larger head are closed, the superciliary ridges not marked, and their hair unnoticeable.

Ears.—The ears in both specimens are perfectly preserved, are markedly developed, and have large lobes. In both specimens each lobe is pierced, and carries a short wooden peg, directed backwards.

Hair.—The hair of the larger head is very abundant, jet black, smooth and wiry, and is 53 cm. long. That of the smaller head is also abundant, a very deep chestnut-brown colour, and extremely silken to the touch. In both cases the hair is firmly attached to the scalp.

Race.—From these considerations, the racial type of the heads indicate the 'American'; at all events, it is not 'Negro.'

Suspensory Cords.—Through the vertex of each head a double two-braided cord of hemp is passed, for the purpose of suspension. The cord attached to the larger head is 35 cm. long; it is tied to a loose cross-piece of wood inside the head, beyond which, through the neck aperture, one portion of the cord projects 28 cm. The total length of this cord is about 100 cm. In the case of the smaller head, the suspensory cord is 28 cm. long, and ends inside the head. Its length is about 60 cm.

Head.—At the back of the neck in both cases an incision has been made from the divided neck-tissues to the position of the superior curved line of the occipital bone, and subsequently closed by continuous stitches. In the case of the smaller head

there are small areas of soft tissue, corresponding to the posterior superior angle of both parietal bones.

Internal examination.—Owing to the smallness of the heads, of the apertures of the neck, and hardness of the tissues, digital examination is difficult; and owing to the dark staining of the tissues, examination of the interior of the heads by light is unsatisfactory. As far as can be ascertained, every particle of the bones of the skull has been removed.

Microscopic and Chemical examination.—A fragment taken from the neck (transverse section) showed (× 450) normal connective-tissue and fat cells, with glandular tissue and a hair bulb. The yellowish stain from the preservative materials extended about half-way through the sections of the tissues examined. Chemical examination showed traces of Ca, heavy traces of NH_3, much Cl. Na. and P. Considerable traces of tannin. The tissues readily softened in boiling water; they also yielded a brownish-yellow solution to alcohol and ether. They were readily inflammable, giving off much smoke and an aromatic odour. Microscopic examination of some fragments from the interior of the heads showed resinous particles, no crystals of bases, but a few clusters of mucor mucedo. The hairs from the scalps proved to be round and smooth; detached cylinders of medullary substance were visible in the hairs from the larger head. The suspensory cords proved to be hemp; those of the lips of the smaller head, cotton.

Leading Anthropological Data.

(For comparative purposes a male European skull was used.)

Weight: Skull 640 gms. Large Head 355 gms. Small Head 55 gms.

Cranial capacity in No. 6 shot	Skull . .	9952 gms.	vol. 1470 c.c.
	Large Head	1050 ,,	,, 144 ,,
	Small Head	505 ,,	,, 72 ,,
Cranial capacity in fine sand	Skull . .	2355 gms.	vol. 1082 c.c.
	Large Head	255 ,,	,, 162 ,,
	Small Head	125 ,,	,, 78 ,,

Cephalic Index:	Skull	78·8.	Large Head	8·2.	Small Head	7·9.	
Facial Angle	,,	80·0°	,,	46·0°	,,	40·0°	
,, ,,	of Negro	69·0°	Gorilla	31·8°	Dog	25·0°	

Remarks.—The heads examined were probably prepared by Javaros Indians, or one of their neighbouring tribes. It does not appear, and I am told, that these tribes do not preserve

or mummify any other part of the body. A distinguishing feature in the larger head examined is the presence of wooden pegs in the lips and ears. This custom does not appear to have been noticed in any of the notes I have been able to refer to, nor is it noted in any of the specimens of which I have collected notes. The presence of lip pegs in the larger head, and of lip strings in the smaller specimen deserve notice. Closure of the lips, by either pegs or strings, may be only alternative or distinctive tribal customs, to indicate absence of organic function, except when the head is consulted as an oracle. Similarly, if the ear-attachments indicate abolition of the function of that organ, we should have expected cords to have been used (as in the lips) in the case of the smaller head. Possibly pegs or cords may be used indifferently in the same head for symbolic purposes. On the other hand, these ear-attachments may be simply ornaments. Notice cannot fail to be taken of the long, black, coarse, wiry hair of the larger head, contrasted with the nut-brown, fine, silky hair of the smaller head. Another differentiation of the heads is the presence of sutures in the divided tissues of the neck of the larger head; their absence in the smaller specimen. There were no artificial eyes, no trace of tattooing or coloration, of feathers, or other decorations, on either head. The usual amount of contraction of these preserved heads is estimated by Ballaert as "above one-fourth." The measurements of the two specimens submitted to me indicate a shrinkage of not less than one-tenth, computed both for size and weight. The extreme limits would appear from my notes to be from natural size to 2·5 cm. (1 in.). The relative proportion of Na. and Cl. found in the fragments of the neck tissue I examined chemically would suggest that common salt played an important part in their preparation, or that the water in which they were boiled (if so treated) was rich in the salts of these elements, whilst the tannin and phosphorus were probably contributed by the vegetable used as the astringent or tanning agent. From the colour, aromatic odour, hardness, and inflammability of the tissues of the smaller head, it is suggested that bitumen or other resinous substances, by the aid of heat, were used in the process employed.

Appended are the details of the results of the examination of these shrunken Indian heads from South America.

Data.	Skull for comparison.	Smaller Head.	Larger Head.
	gms.		
1. Weight,	640	355	55
2. Cranial capacity By weight in No. 6 shot,	995·2	1015	505
3. Cranial capacity By weight in No. 8 (standard of Broca and Topinard),	1094·7	1116	555
4. Cranial capacity By weight in fine sand,	235·5	255	125
(Mexican 1339 gms., Pernvian 1234,—Topinard).	c.c.		
5. By volume in No. 6 shot,	1470	144	72
6. By volume in No. 8,	1543·5	151	75·5
7. By volume in fine sand,	1082	162	78
Cephalic Measurements.			
	cm.	cm.	cm.
8. Antero-posterior, maximum,	18·0°	9·0°	7·4°
9. Transverse, maximum,	14·2	7·4	5·7
10. Vertical (basilo-bregmatic),	14·5	7·2	7·0
11. Occipito-mental,	22·6	12·2	9·4
12. Cervico-bregmatic,	11·0	7·0	6·5
13. Fronto-mental,	12·0	5·9	5·5
14. Inter-aural,	12·5	7·3	4·1
15. Inter-malar,	13·0	6·3	4·5
16. Inter-parietal,	13·6	6·8	5·4
17. ,, -vertical,	15·0	9·4	6·1
18. Angulo-mental,	10·2	4·0	3·2
Cephalic Measurement (curved by tape).			
19. Circumference at supercillary line,	51	24·5	21
20. Vertex, inter-aural,	32	16·5	14·2
21. Inter-parietal,	21	10·0	7·5
22. Face—vertical (L. jaw to horizontal of vertex),	17·5	9·0	8·0
23. Naso-vertex + summit to end of nose,	...	(7+2) 9·0	(4+2·8) 6·8
24. Cephalic index,	78·8	8·2	7·9
25. Facial angles (Camper's), Negro 59°, Gorilla 31·5°, Dog 25·0°,	80·0	46·0	40·0
26. ,, ,, (Cuvier's),	68·5	38·0	40·0
27. ,, ,, (Cloquet's),	72·0	40·0	45·5
28. ,, ,, (Jacquart's),	85·0	40·5	52·0
Miscellaneous Measurements.			
29. Length of hair from vertex, maximum,	...	53	24
30. ,, ,, average,	...	27	18·5
31. ,, ,, on supercilliary ridges,	...	5 mm.	none
		cm.	cm.
32. Mouth, inter-angular, over lip,	...	4·5	4·5
33. Lips, thick.,	...	·8	indistinguishable
34. Wooden pegs (3) through lips, length,	...	4·5	Lips tied
35. ,, ,, ,, diameter,	...	·2	*
36. Ear, vertical diameter,	...	2·2	2·6
37. ,, transverse diameter,	...	2·0	2·0
38. ,, lobe, vertical diameter,	...	1·0	·5
39. ,, wooden peg through right lobe (thick. 2 mm.),	...	1·8	1·5 broken
40. ,, ,, ,, left ,,	...	2·2	base upwards
41. Eye, palpebral aperture, transverse,	...	1·0	1·0
42. Nose, nostrils,	...	4×4 mm.	4×4 mm.
		cm.	cm.
43. Neck, circumference at point of decapitation,	...	15·0	10·0
44. ,, aperture ,, ,,	...	3·5×3	2·5×2
45. ,, skin, thick. at nape,	...	4 mm.	2 mm.
46. Chin, width,	...	1·6	1·4
47. Suspensory cord, length 35 cm. ×2+28 from inside larger head, including knot,—Total, say,	...	100	...
48. Suspensory cord of small head, length 32×2, including knot,—Total, say,	...	...	70

* Lips tied with 42 cotton cords, arranged in three skeins, each 23 cm. long.

Assuming that the relative shrinkage of the heads is uniform throughout all parts, and that it has been a fraction less than one-tenth, as indicated by these observations, the observed cephalic indices support that inference, and classify the individuals as mesaticephalic.